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Characterization of A Reactive Arc Plasma

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The plasma composition, average charge state values, as well as the kinetic energy of the aluminum ions have been measured by TOF spectrometry as a function of the oxygen partial pressure. The plasma was produced in cathodic arc spots. It was found that the oxygen partial pressure reduces the average charge state as well as the kinetic ion energy. These data are important for the evolution of both composition and structure during thin film growth from highly ionized plasma.